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NOTES ON A SUCCESSFUL NESTING BY A PAIR OF YEARLING PEREGRINE FALCONS (*Falco peregrinus*)

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It is rare for yearling male Peregrine Falcons (*Falco peregrinus*) to breed; occasionally an immature female will pair with an adult male. When yearlings attempt to breed, many fail to produce eggs or lay a smaller than normal clutch; if eggs are produced, young seldom fledge (Hagar 1965, Hickey 1965, Cade 1982, Mearns and Newton 1984, Ambrose and Riddle 1988, Newton and Mearns 1988). In Milwaukee, Wisconsin, in 1988, a pair of yearling peregrines produced and fledged young. This is the first known record of successful nesting by a pair of yearlings.

STUDY SITE

The First Wisconsin Center, overlooking Lake Michigan, is the tallest building in Wisconsin. The top floor is an observation deck, with full length glass windows on all sides. The nest was in a hack box (Sherrod et al. 1982) that had been installed on a 2 m ledge outside the windows on the west side of this floor, 178 m above street level. Fourteen young peregrines had been released from the site in 1987.

HISTORY OF FALCONS

The male of the pair, a *F. p. pealei* × *F. peregrinus*, had been released in 1987 in Ft. Sheridan, Illinois, with 10 other youngsters. He was described as a dominant bird (J. McCoy and M. Spreyer, *in litt.*). The female, a *F. p. anatum*, was one of 20 young released in Rochester, Minnesota, in 1987.

BREEDING ACTIVITY

A peregrine was seen hunting near the First Wisconsin Center on 21 March 1988. Within 10 d a second falcon had joined it. Both birds were in juvenile plumage, except for a spattering of adult feathers on their backs and a fair amount of white on the crop area. Both falcons molted quickly. By mid-June they looked adult, especially from a distance. By July, their heads, backs and well over 75% of their undersides had molted and they were replacing their flight feathers.

Both falcons were seen regularly through 18 May. We inspected the hack box on 13 May, but found no evidence of nesting. When sightings stopped abruptly after 18 May, we thought the pair had left the area. But on 15 June we found the female in the hack box brooding two new chicks, one male and one female. These were the first peregrines hatched in the wild in Wisconsin in over 20 years.

Because of precarious footing in front of the hack box, we feared for the safety of the nestlings so we barred the front of the box on 10 July. The parents continued to feed the young through the bars. We added two captive-produced chicks on 15 July. We banded all four chicks, color-marked them with fluorescent spray paint, and released them from the box on 26 July, at an age of 38-42 days.

All four young fledged. The male was strongly aggressive toward the young, stooping and striking once they were in the air or when they perched on exposed ledges. His attack was particularly intense when the flight of the young falcons appeared unsteady; at times he actually knocked them out of the air. Although stooping became less intense with time, each fledgling was driven to the ground at least once. While stooping, the male often gave creaking calls as described by Ratcliffe (1980).

One youngster broke a femur when it hit the ground after an attack and later died of complications. Another died after hitting a glass window. The third youngster was injured twice, but survived and was relocated to a hack site in Omaha, Nebraska. The fourth stayed in Milwaukee and was last seen in early September.

DISCUSSION

Most reports of juvenile peregrines attempting to breed come from relatively recent observations of an expanding, reintroduced population. As Hunt (1988:673) pointed out, "There is little information on the ecological age of first breeding in stable, undisturbed populations of peregrines." Competition for nest sites has been recognized as a factor limiting the number of breeding yearlings. From 1935-1957, Hagar (1969) observed only one mated juvenile female on a highly rated cliff; six others were found on low rated cliffs. None of these seven nests were successful. Today, tall buildings in cities are providing more high-quality nest sites, and without a stable population of adult peregrines, these sites are available for juveniles to attempt to nest.

Newton and Mearns (1988) suggest that breeding might be delayed because juveniles that are inefficient foragers or are confined to areas where prey is scarce cannot develop the body reserves necessary to breed and cannot afford to spend time defending a territory. This is especially true for young males, for whom the increased burden of feeding a mate and family requires well developed hunting skills. The western shore of Lake Michigan is a well-documented migration route, and the availability of prey may have

played a role in the pair of falcons selecting Milwaukee as a nest site and breeding successfully as yearlings.

According to Ratcliffe (1980:341), paired juveniles "are often in transitional plumage, with a mixture of dark brown and slate grey." He also noted that breeding adults "do not usually begin to molt until nesting is well advanced or actually over." Our juvenile pair molted very quickly; both looked adult by the time the eggs had hatched, especially when viewed from a distance. We agree with Ambrose and Riddle (1988:680), who feel that "there may be other cases of one year old birds attempting to breed which were not detected because of their nearly adult plumage." It is possible that the hormone levels necessary to initiate and maintain breeding behavior might affect the rate at which mated juveniles attain their adult plumage.

Skutch (1976) suggests that when parent birds drive fledglings from the air or from exposed perches, this may be a response that reduces detection by predators. Also, "surviving subadult falcons which returned to hack sites from the preceding year appeared to react somewhat like parents with this respect. The aggressive stoops by which the subadults forced the young down, however, were of a more serious nature, and they often hit the youngsters a forceful blow. The stimulus in this case seems to be a 'new falcon' flying in the area, and aggression is the response" (Sherrod 1983:144).

The young age of the male in our study may well have caused his strongly aggressive behavior. We do not know if adding the bars to the hack box contributed to his aggression by limiting his contact with the chicks, but had the young left the box prematurely, they might have been knocked off the ledge by the male's attacks before they were old enough to fly. As a breeding adult, the male also harassed his fledged young when their flight appeared weak, but never with the same intensity and we never again saw him strike them forcefully.

RESUMEN.—En 1988, en Milwaukee, Wisconsin, una pareja de Halcones Peregrinos (*Falco peregrinus*) de aproximadamente un año de edad, incubó y crió hasta que las crías pudieran volar; siendo éste, el primer caso que conocemos de una nidada con logros positivos. La pareja cambió de plumaje rápidamente; a mediados de junio, y especialmente a la distancia, los dos tenían la apariencia adulta. El macho se mostró agresivo con sus crías, lanzándose hacia ellos y golpeándoles fuertemente.

[Traducción de Eudoxio Paredes-Ruiz]

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